FIG. 1

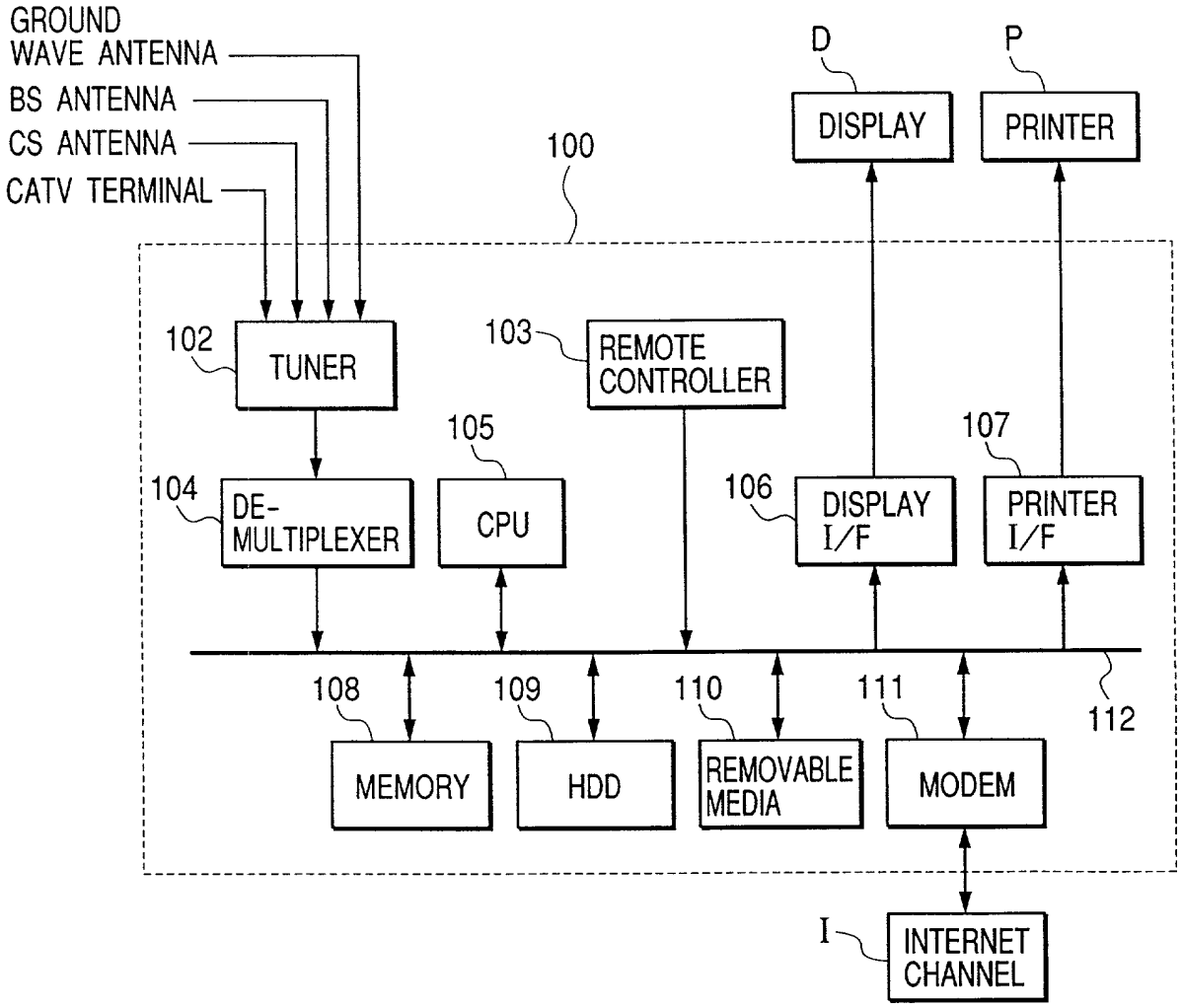

GROUND WAVE ANTENNA
BS ANTENNA
CS ANTENNA
CATV TERMINAL
100
D
DISPLAY
P
PRINTER
102
TUNER
103
REMOTE CONTROLLER
104
DE-MULTIPLEXER
105
CPU
106
DISPLAY I/F
107
PRINTER I/F
108
MEMORY
109
HDD
110
REMOVABLE MEDIA
111
MODEM
112
I
INTERNET CHANNEL

FIG. 2

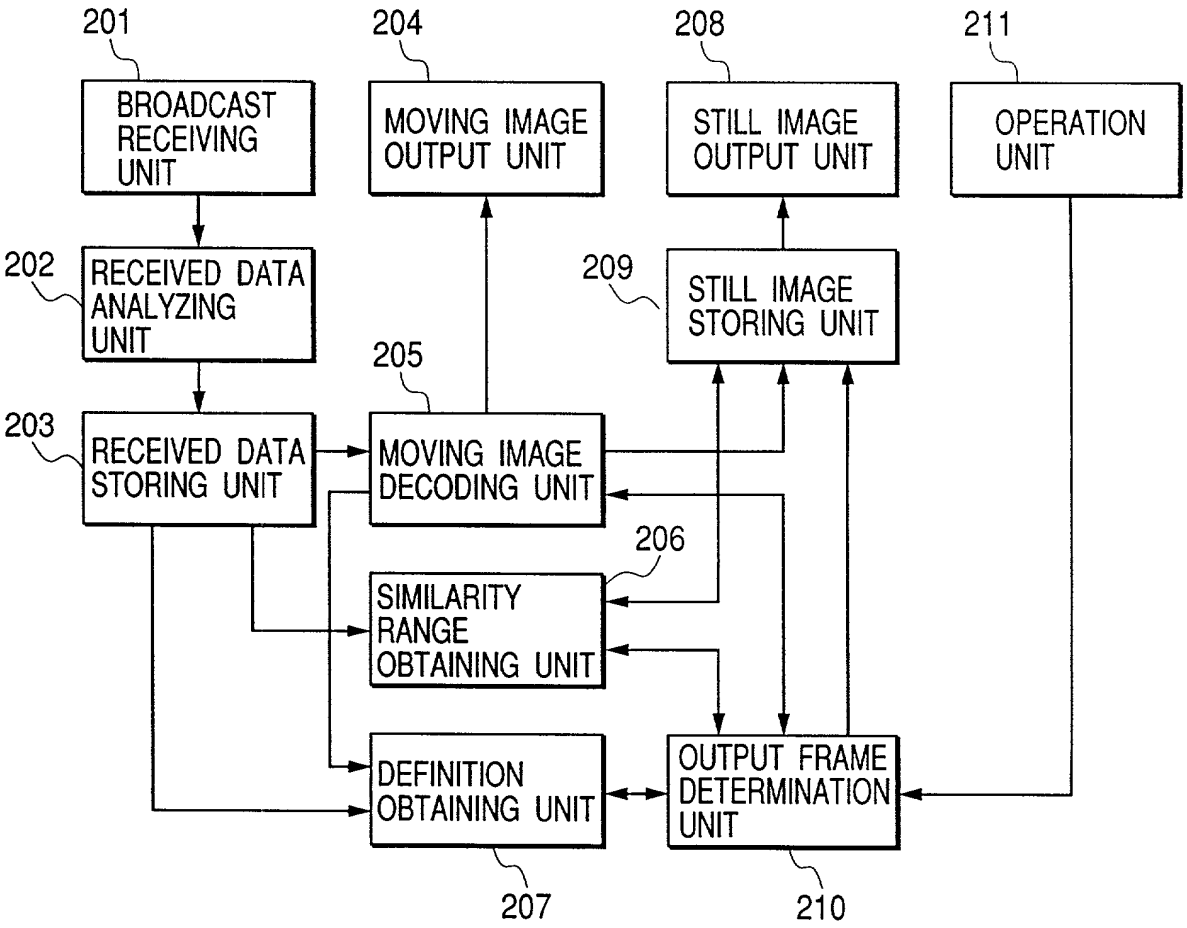

201
BROADCAST RECEIVING UNIT
204
MOVING IMAGE OUTPUT UNIT
208
STILL IMAGE OUTPUT UNIT
211
OPERATION UNIT
202
RECEIVED DATA ANALYZING UNIT
209
STILL IMAGE STORING UNIT
205
203
RECEIVED DATA STORING UNIT
MOVING IMAGE DECODING UNIT
206
SIMILARITY RANGE OBTAINING UNIT
DEFINITION OBTAINING UNIT
OUTPUT FRAME DETERMINATION UNIT
207
210

FIG. 3

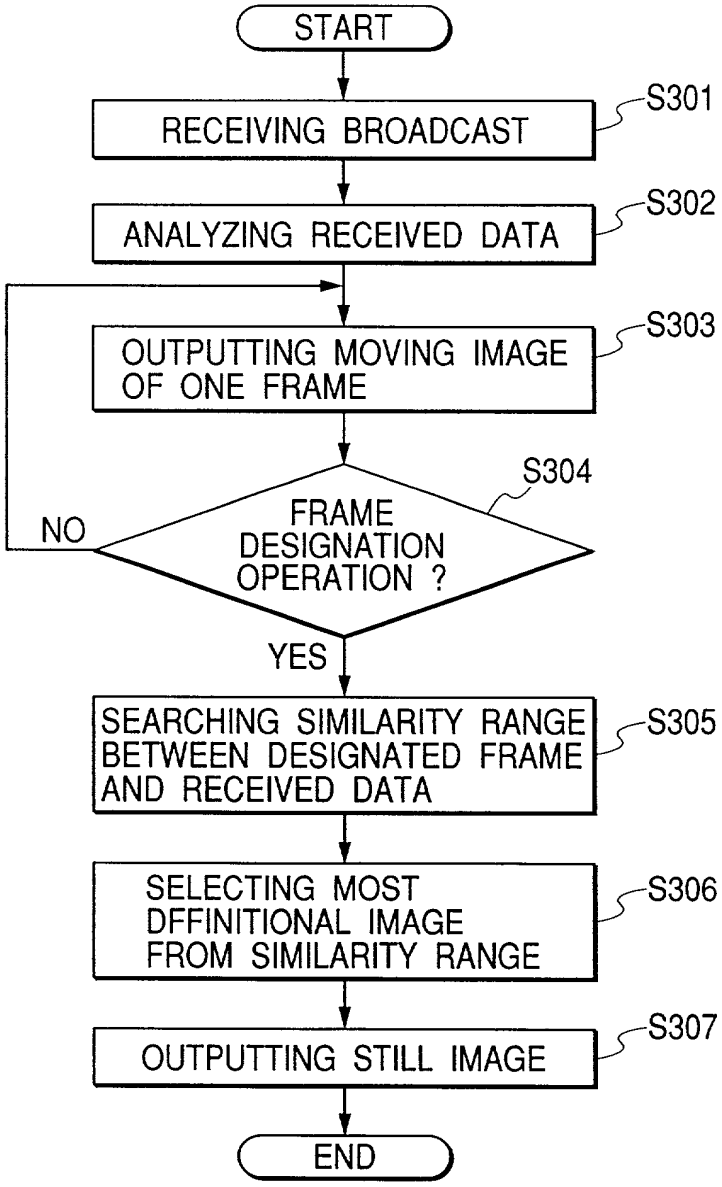

START
RECEIVING BROADCAST
S301
ANALYZING RECEIVED DATA
S302
OUTPUTTING MOVING IMAGE OF ONE FRAME
S303
FRAME DESIGNATION OPERATION ?
S304
NO
YES
SEARCHING SIMILARITY RANGE BETWEEN DESIGNATED FRAME AND RECEIVED DATA
S305
SELECTING MOST DFFINITIONAL IMAGE FROM SIMILARITY RANGE
S306
OUTPUTTING STILL IMAGE
S307
END

FIG. 4

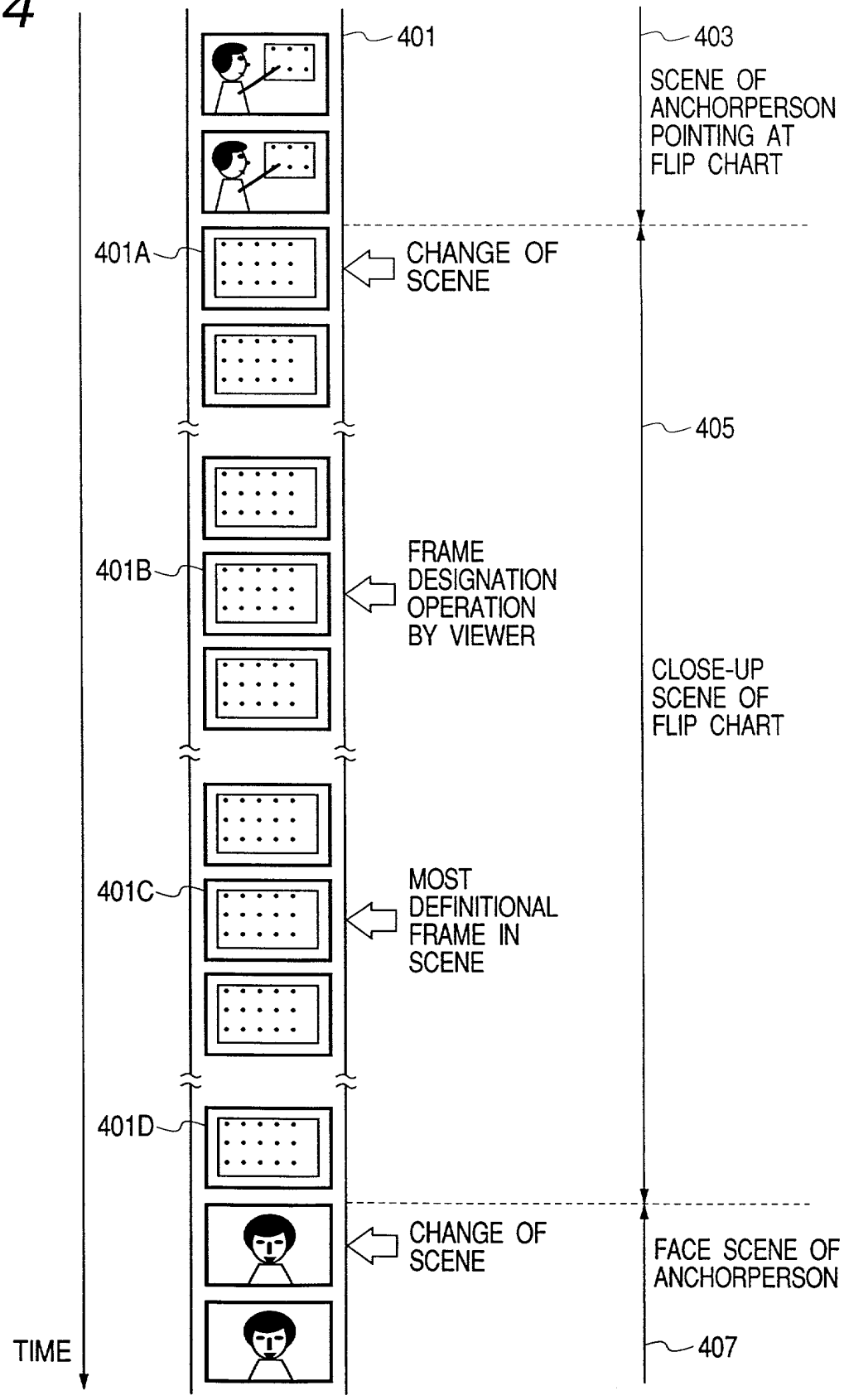

401
403
SCENE OF ANCHORPERSON POINTING AT FLIP CHART
401A
CHANGE OF SCENE
405
401B
FRAME DESIGNATION OPERATION BY VIEWER
CLOSE-UP SCENE OF FLIP CHART
401C
MOST DEFINITIONAL FRAME IN SCENE
401D
CHANGE OF SCENE
FACE SCENE OF ANCHORPERSON
TIME
407

FIG. 5

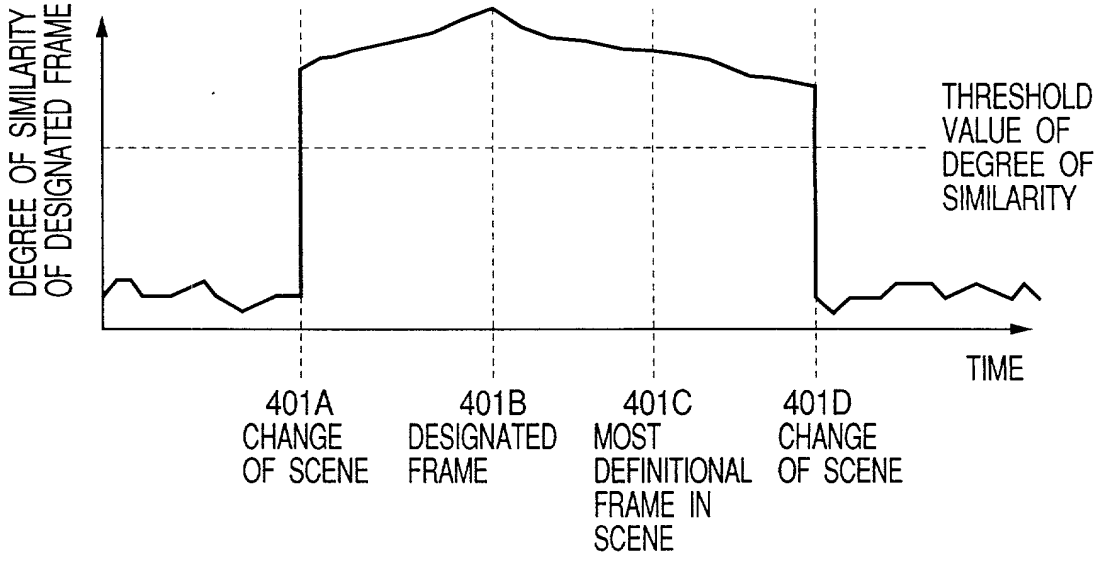

DEGREE OF SIMILARITY OF DESIGNATED FRAME
THRESHOLD VALUE OF DEGREE OF SIMILARITY
TIME
401A CHANGE OF SCENE
401B DESIGNATED FRAME
401C MOST DEFINITIONAL FRAME IN SCENE
401D CHANGE OF SCENE

FIG. 6

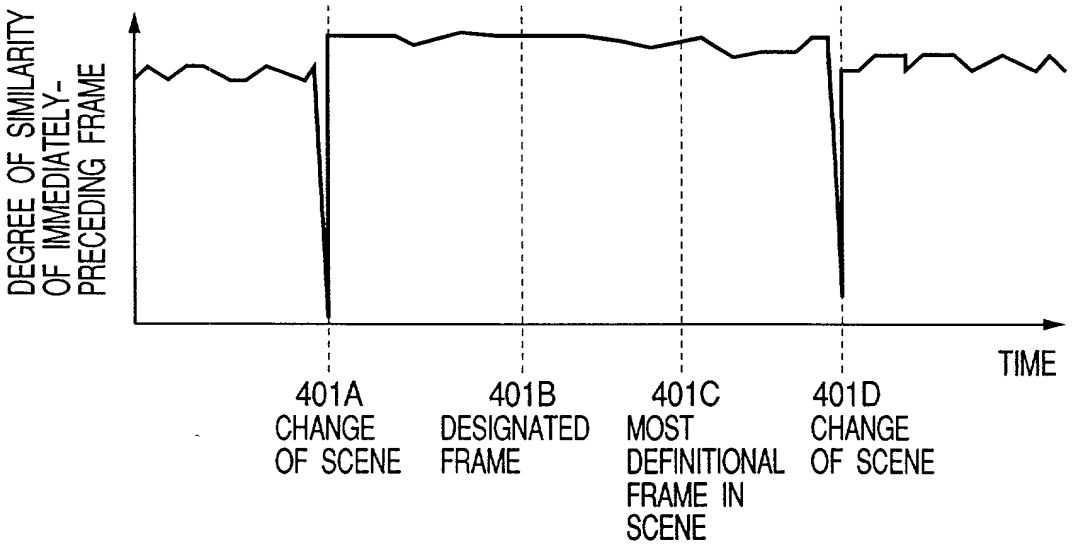

DEGREE OF SIMILARITY OF IMMEDIATELY-PRECEDING FRAME
TIME
401A CHANGE OF SCENE
401B DESIGNATED FRAME
401C MOST DEFINITIONAL FRAME IN SCENE
401D CHANGE OF SCENE

FIG. 7

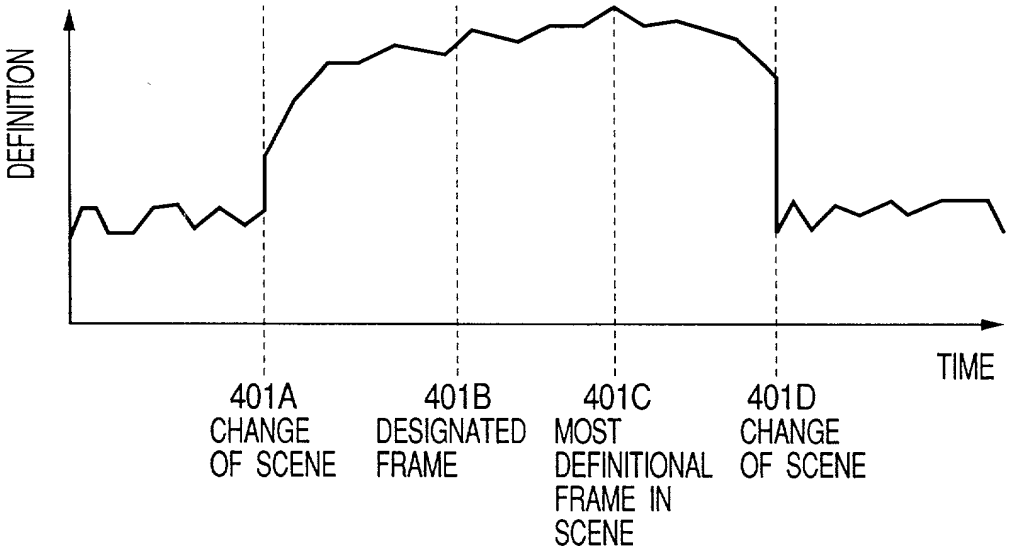

DEFINITION
TIME
401A
CHANGE
OF SCENE
401B
DESIGNATED
FRAME
401C
MOST
DEFINITIONAL
FRAME IN
SCENE
401D
CHANGE
OF SCENE

FIG. 8

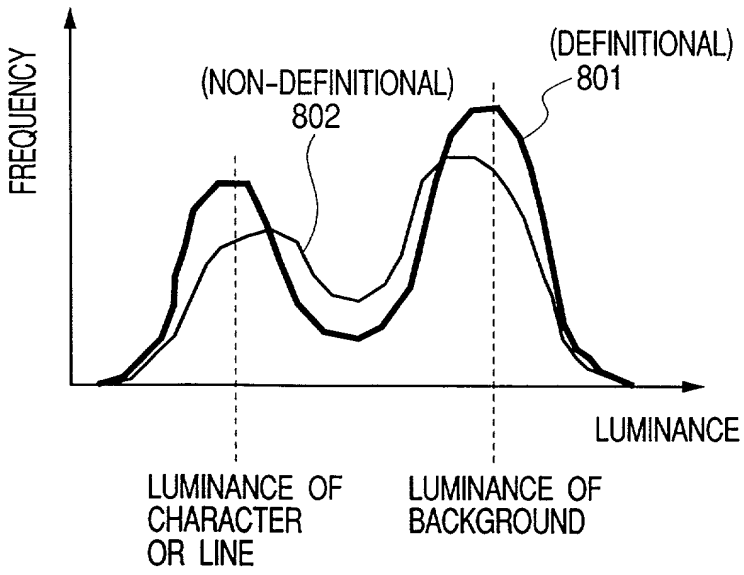

FREQUENCY
(NON-DEFINITIONAL)
802
(DEFINITIONAL)
801
LUMINANCE
LUMINANCE OF
CHARACTER
OR LINE
LUMINANCE OF
BACKGROUND

FIG. 9

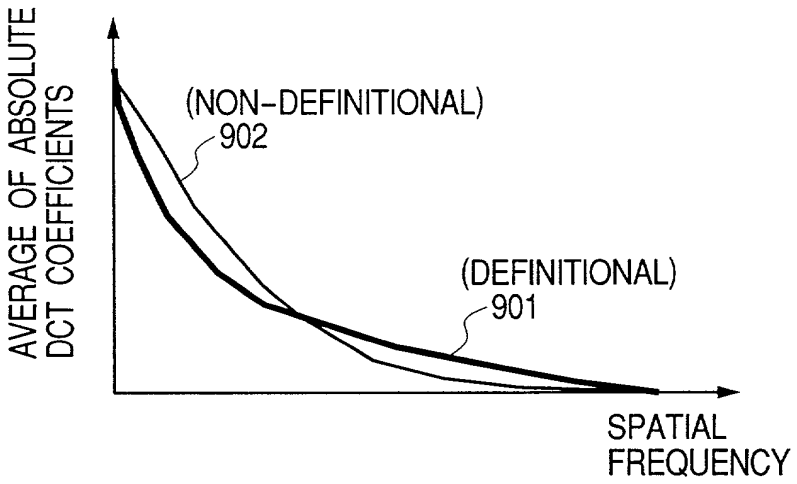

AVERAGE OF ABSOLUTE DCT COEFFICIENTS
(NON-DEFINITIONAL)
902
(DEFINITIONAL)
901
SPATIAL FREQUENCY

FIG. 10

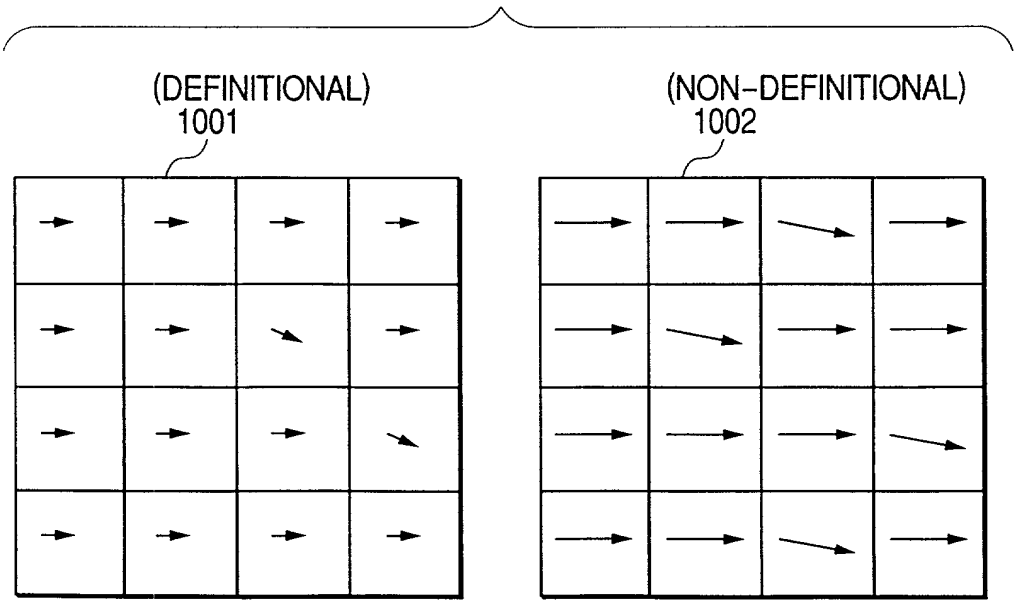

(DEFINITIONAL)
1001
(NON-DEFINITIONAL)
1002

FIG. 11

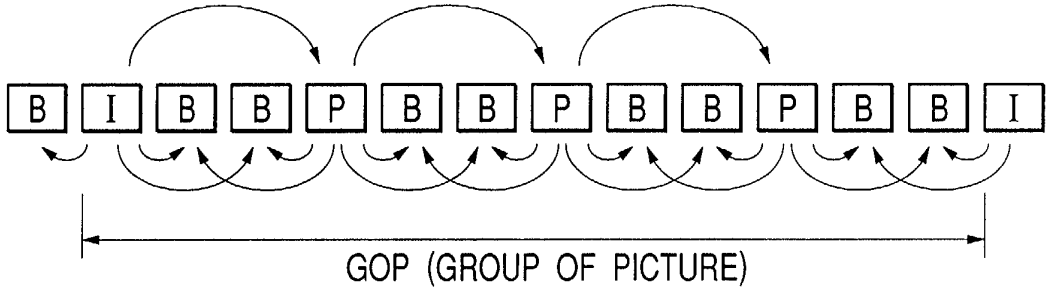

B I B B P B B P B B P B B I
GOP (GROUP OF PICTURE)

FIG. 12

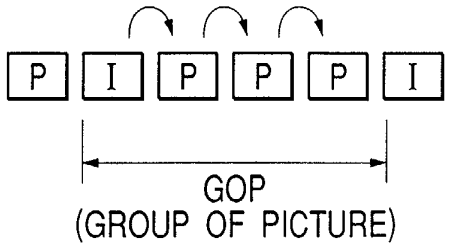

P I P P P I
GOP
(GROUP OF PICTURE)

FIG. 13

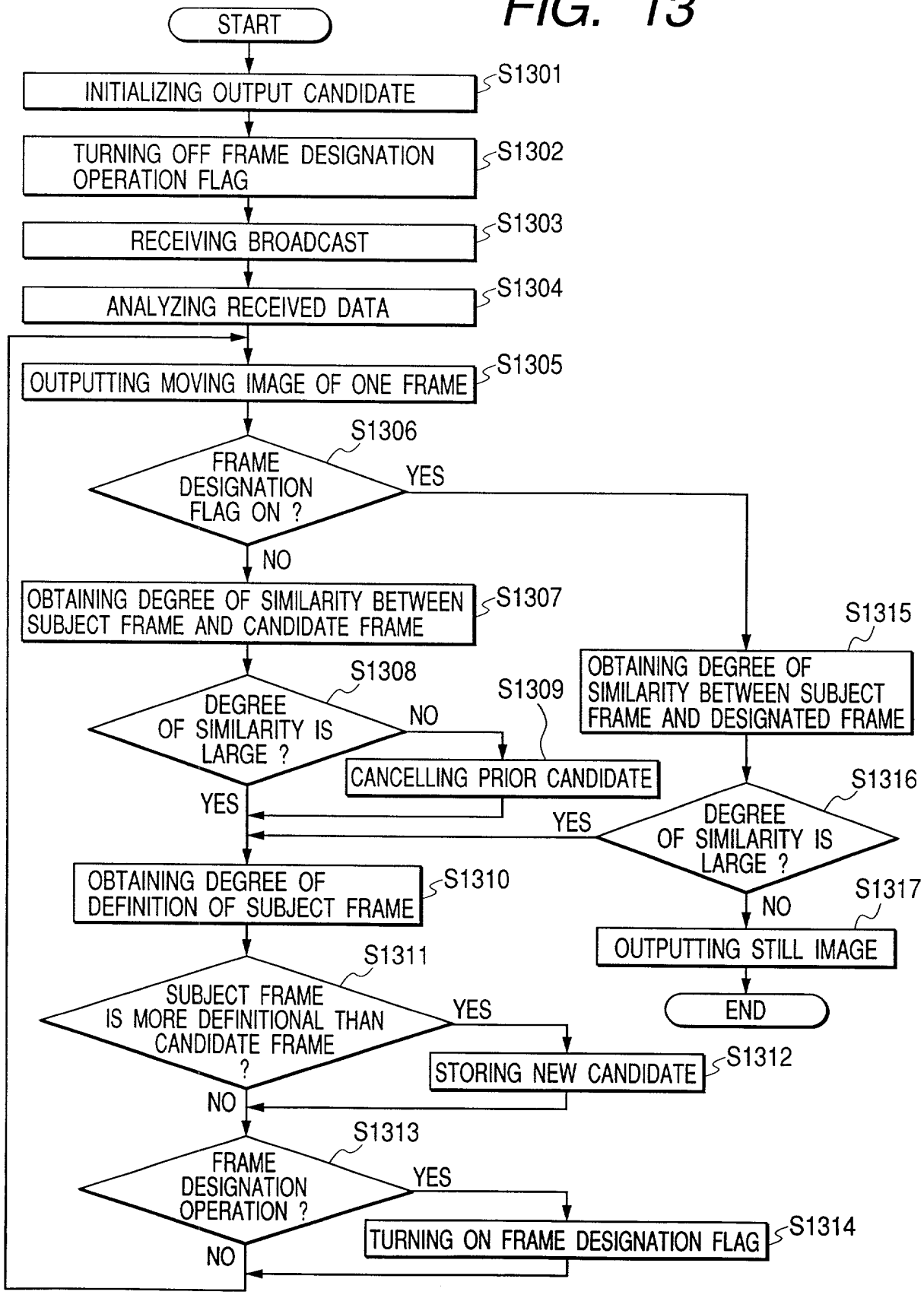

START
INITIALIZING OUTPUT CANDIDATE
S1301
TURNING OFF FRAME DESIGNATION OPERATION FLAG
S1302
RECEIVING BROADCAST
S1303
ANALYZING RECEIVED DATA
S1304
OUTPUTTING MOVING IMAGE OF ONE FRAME
S1305
FRAME DESIGNATION FLAG ON ?
S1306
YES
NO
OBTAINING DEGREE OF SIMILARITY BETWEEN SUBJECT FRAME AND CANDIDATE FRAME
S1307
DEGREE OF SIMILARITY IS LARGE ?
S1308
NO
S1309
CANCELLING PRIOR CANDIDATE
YES
OBTAINING DEGREE OF DEFINITION OF SUBJECT FRAME
S1310
SUBJECT FRAME IS MORE DEFINITIONAL THAN CANDIDATE FRAME ?
S1311
YES
STORING NEW CANDIDATE
S1312
NO
FRAME DESIGNATION OPERATION ?
S1313
YES
TURNING ON FRAME DESIGNATION FLAG
S1314
NO
OBTAINING DEGREE OF SIMILARITY BETWEEN SUBJECT FRAME AND DESIGNATED FRAME
S1315
DEGREE OF SIMILARITY IS LARGE ?
S1316
YES
NO
S1317
OUTPUTTING STILL IMAGE
END

FIG. 14

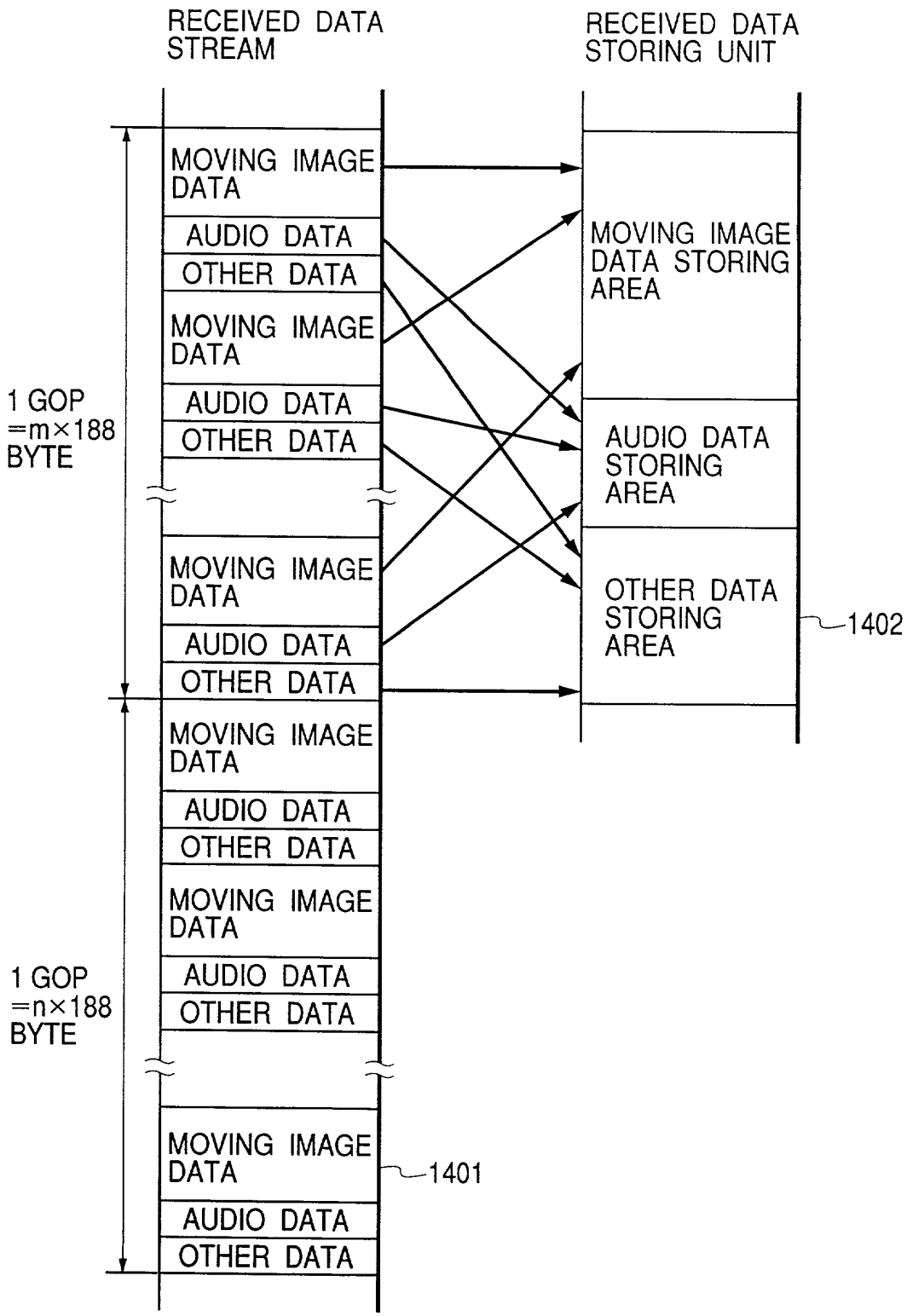

RECEIVED DATA STREAM
RECEIVED DATA STORING UNIT
MOVING IMAGE DATA
AUDIO DATA
OTHER DATA
MOVING IMAGE DATA
AUDIO DATA
OTHER DATA
MOVING IMAGE DATA
AUDIO DATA
OTHER DATA
1 GOP =m×188 BYTE
MOVING IMAGE DATA
AUDIO DATA
OTHER DATA
MOVING IMAGE DATA
AUDIO DATA
OTHER DATA
MOVING IMAGE DATA
AUDIO DATA
OTHER DATA
1 GOP =n×188 BYTE
MOVING IMAGE DATA
AUDIO DATA
OTHER DATA
1401
MOVING IMAGE DATA STORING AREA
AUDIO DATA STORING AREA
OTHER DATA STORING AREA
1402

FIG. 15

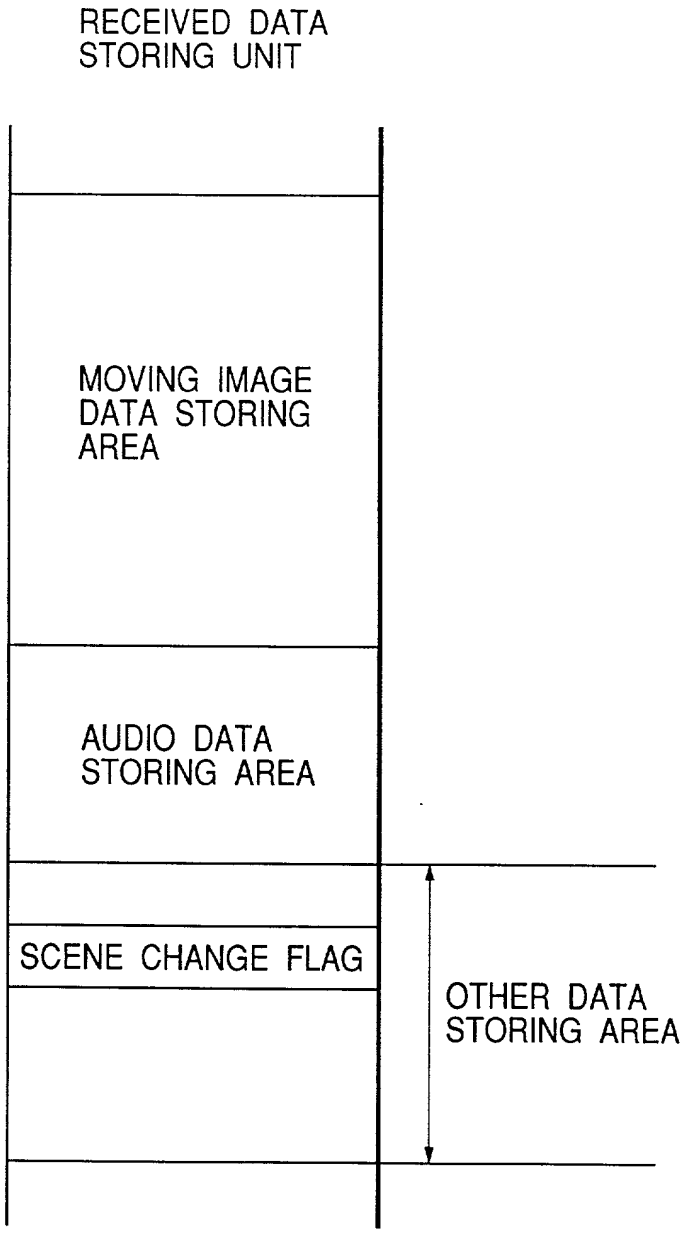

RECEIVED DATA STORING UNIT
MOVING IMAGE DATA STORING AREA
AUDIO DATA STORING AREA
SCENE CHANGE FLAG
OTHER DATA STORING AREA

FIG. 16

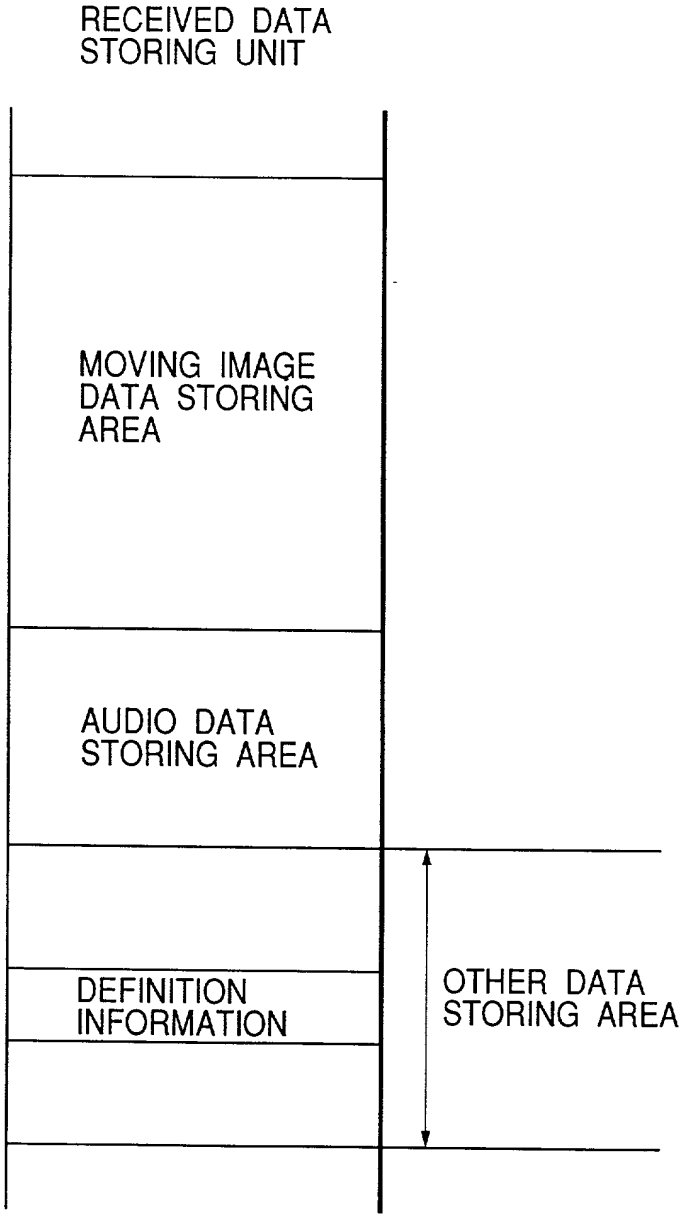

RECEIVED DATA STORING UNIT
MOVING IMAGE DATA STORING AREA
AUDIO DATA STORING AREA
DEFINITION INFORMATION
OTHER DATA STORING AREA

FIG. 17

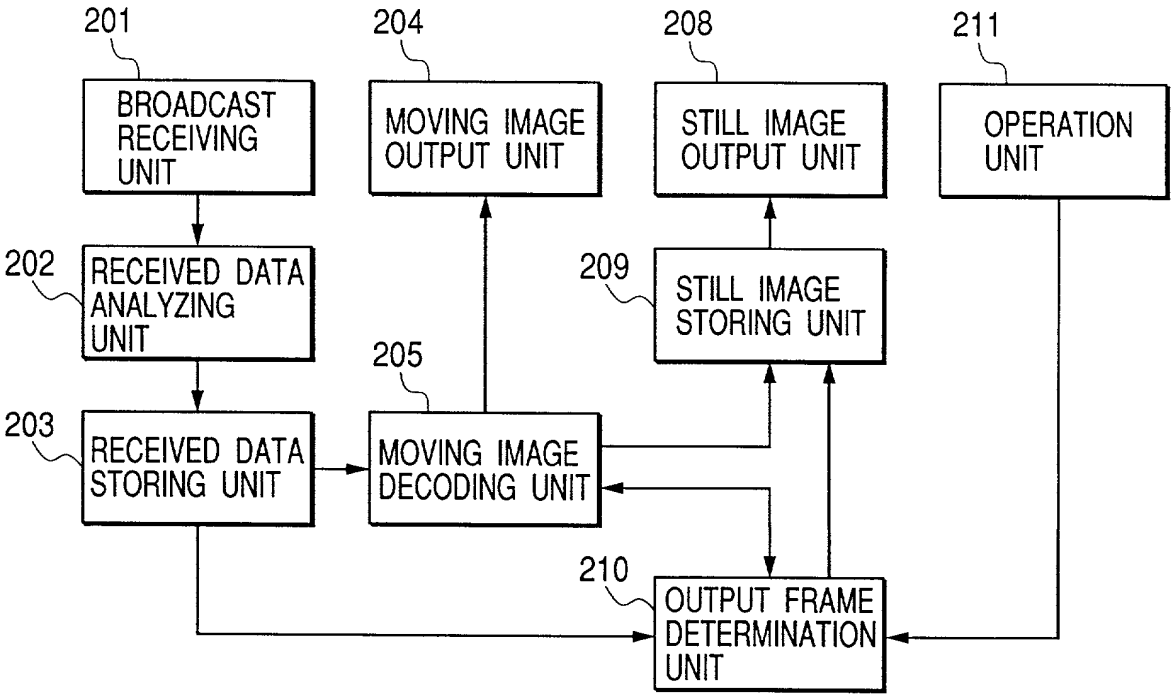

201
BROADCAST RECEIVING UNIT
204
MOVING IMAGE OUTPUT UNIT
208
STILL IMAGE OUTPUT UNIT
211
OPERATION UNIT
202
RECEIVED DATA ANALYZING UNIT
209
STILL IMAGE STORING UNIT
205
203
RECEIVED DATA STORING UNIT
MOVING IMAGE DECODING UNIT
210
OUTPUT FRAME DETERMINATION UNIT

FIG. 18

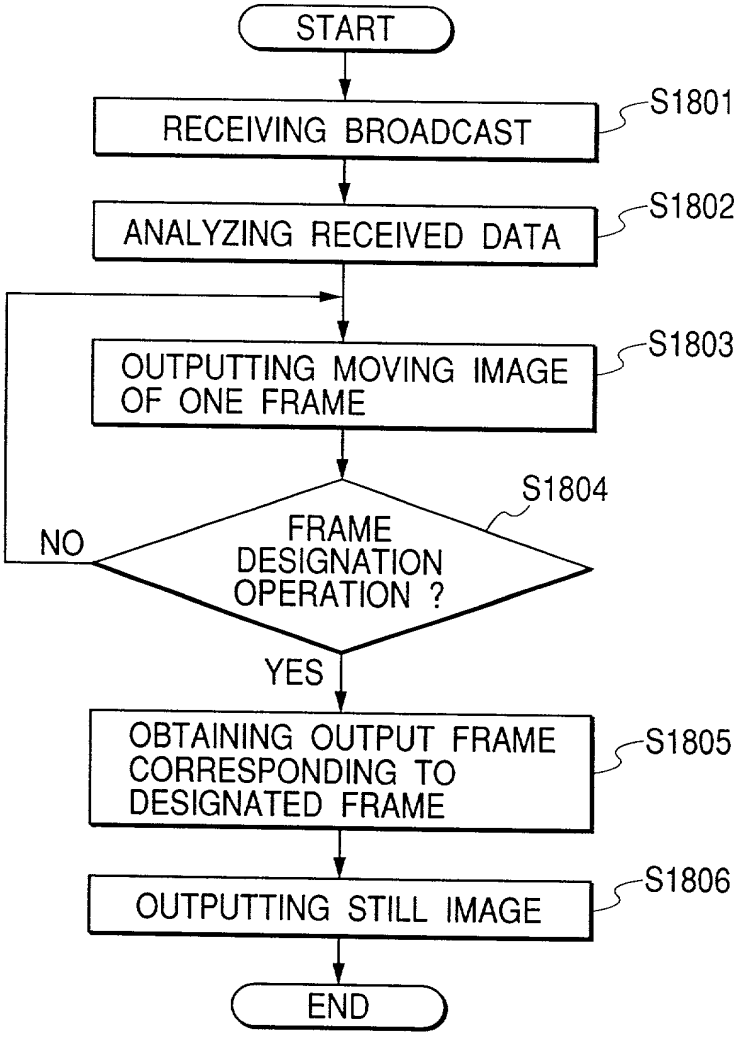

START
RECEIVING BROADCAST
S1801
ANALYZING RECEIVED DATA
S1802
OUTPUTTING MOVING IMAGE OF ONE FRAME
S1803
FRAME DESIGNATION OPERATION ?
S1804
NO
YES
OBTAINING OUTPUT FRAME CORRESPONDING TO DESIGNATED FRAME
S1805
OUTPUTTING STILL IMAGE
S1806
END

FIG. 19

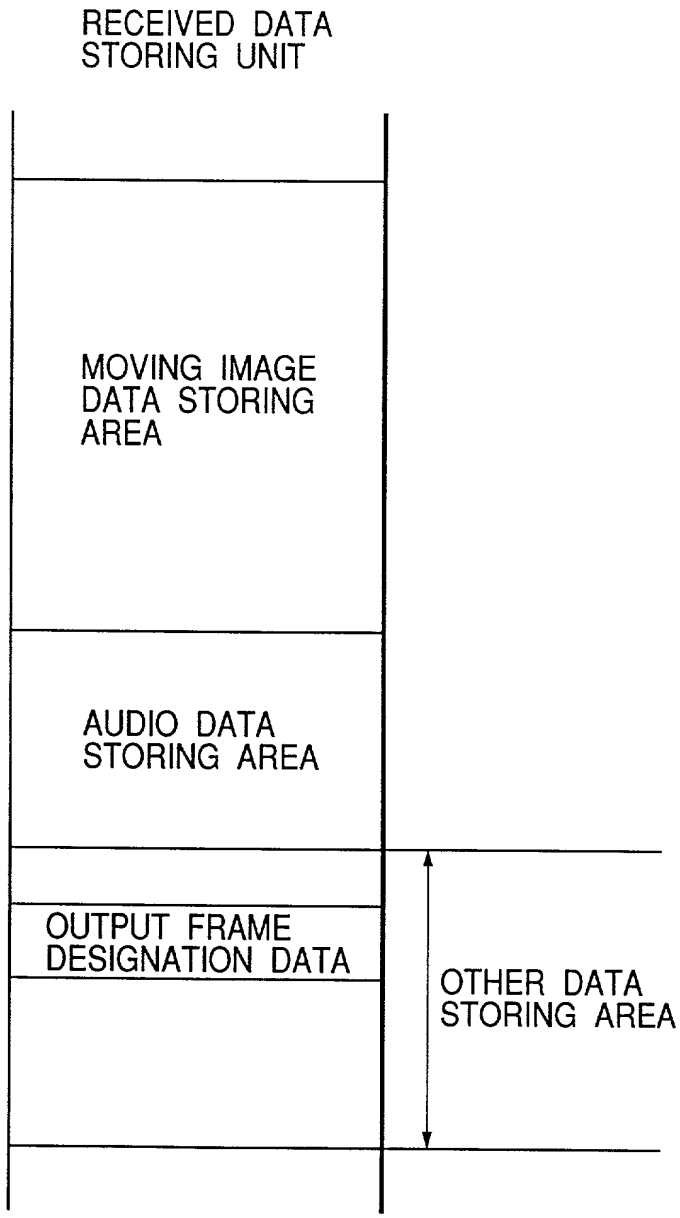

RECEIVED DATA STORING UNIT
MOVING IMAGE DATA STORING AREA
AUDIO DATA STORING AREA
OUTPUT FRAME DESIGNATION DATA
OTHER DATA STORING AREA

FIG. 20

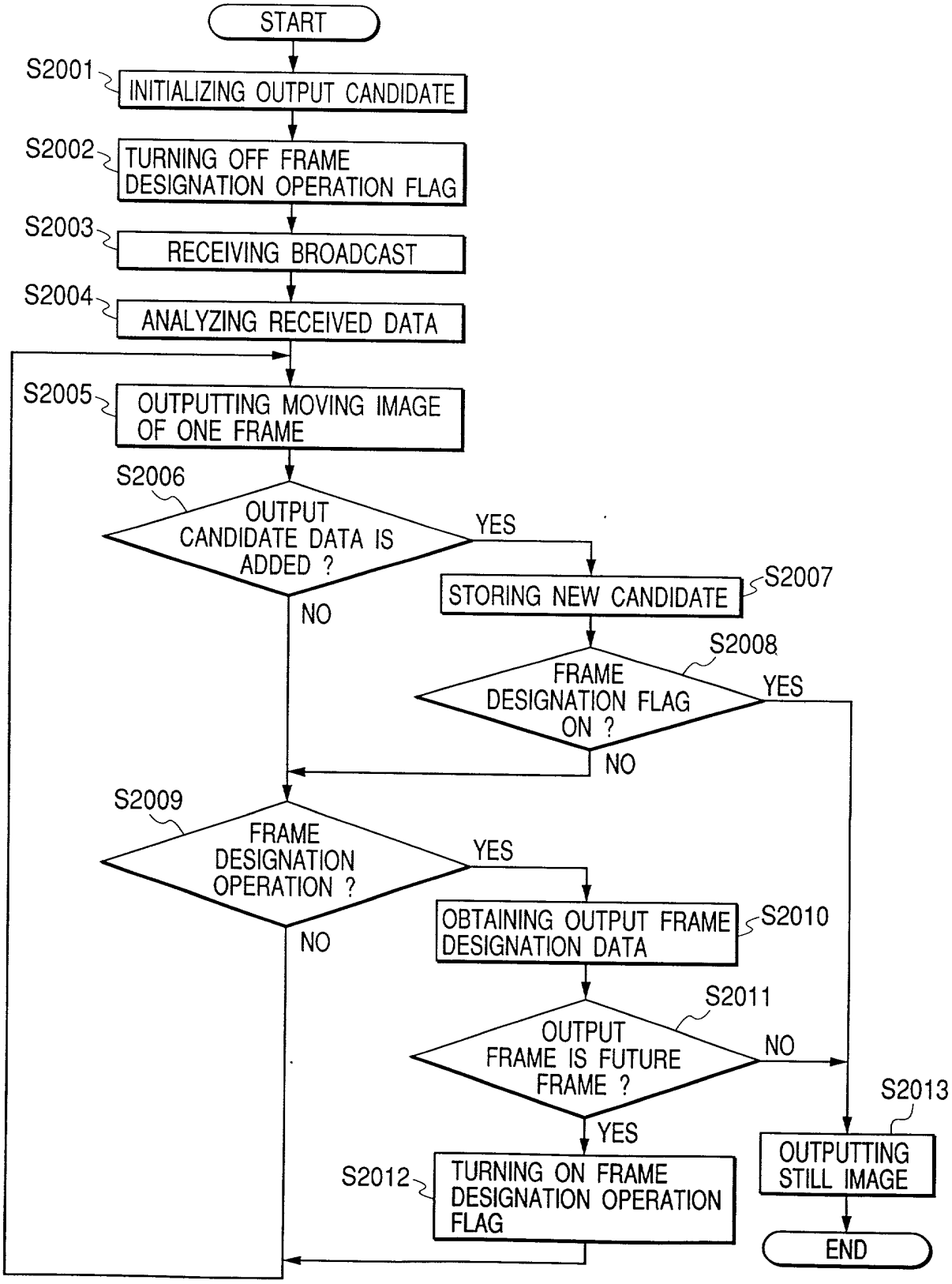

START
S2001
INITIALIZING OUTPUT CANDIDATE
S2002
TURNING OFF FRAME DESIGNATION OPERATION FLAG
S2003
RECEIVING BROADCAST
S2004
ANALYZING RECEIVED DATA
S2005
OUTPUTTING MOVING IMAGE OF ONE FRAME
S2006
OUTPUT CANDIDATE DATA IS ADDED ?
YES
NO
S2007
STORING NEW CANDIDATE
S2008
FRAME DESIGNATION FLAG ON ?
YES
NO
S2009
FRAME DESIGNATION OPERATION ?
YES
NO
S2010
OBTAINING OUTPUT FRAME DESIGNATION DATA
S2011
OUTPUT FRAME IS FUTURE FRAME ?
NO
YES
S2012
TURNING ON FRAME DESIGNATION OPERATION FLAG
S2013
OUTPUTTING STILL IMAGE
END

FIG. 21

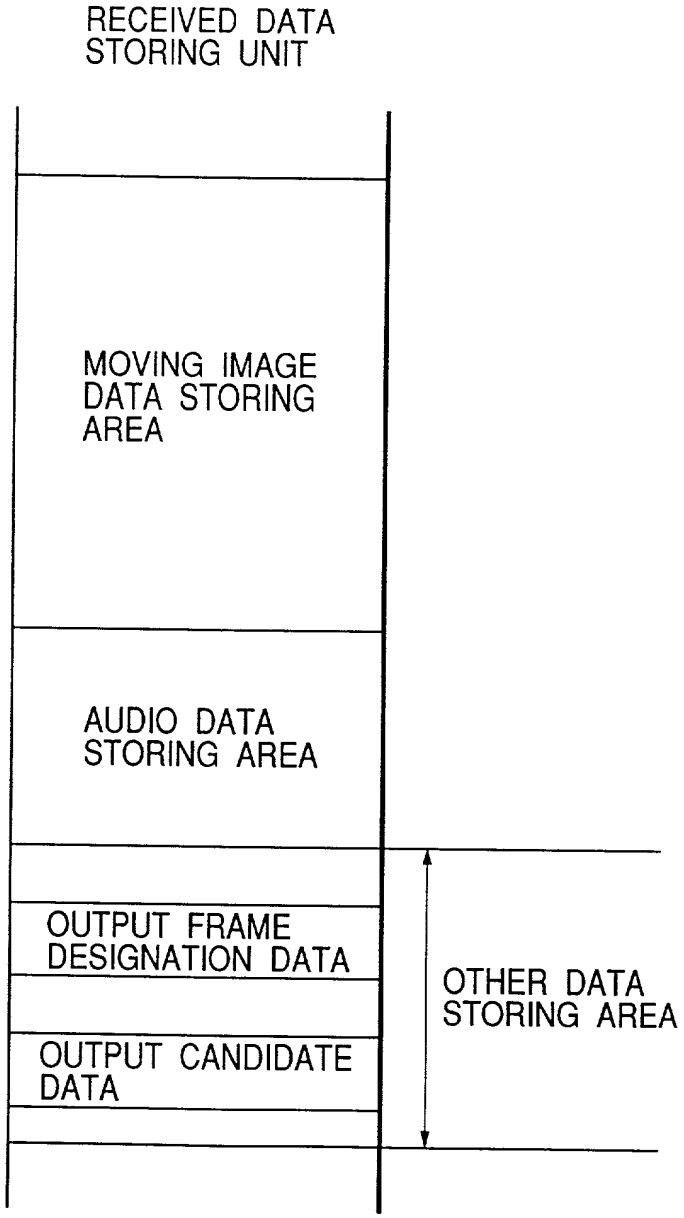

RECEIVED DATA STORING UNIT
MOVING IMAGE DATA STORING AREA
AUDIO DATA STORING AREA
OUTPUT FRAME DESIGNATION DATA
OUTPUT CANDIDATE DATA
OTHER DATA STORING AREA

FIG. 22

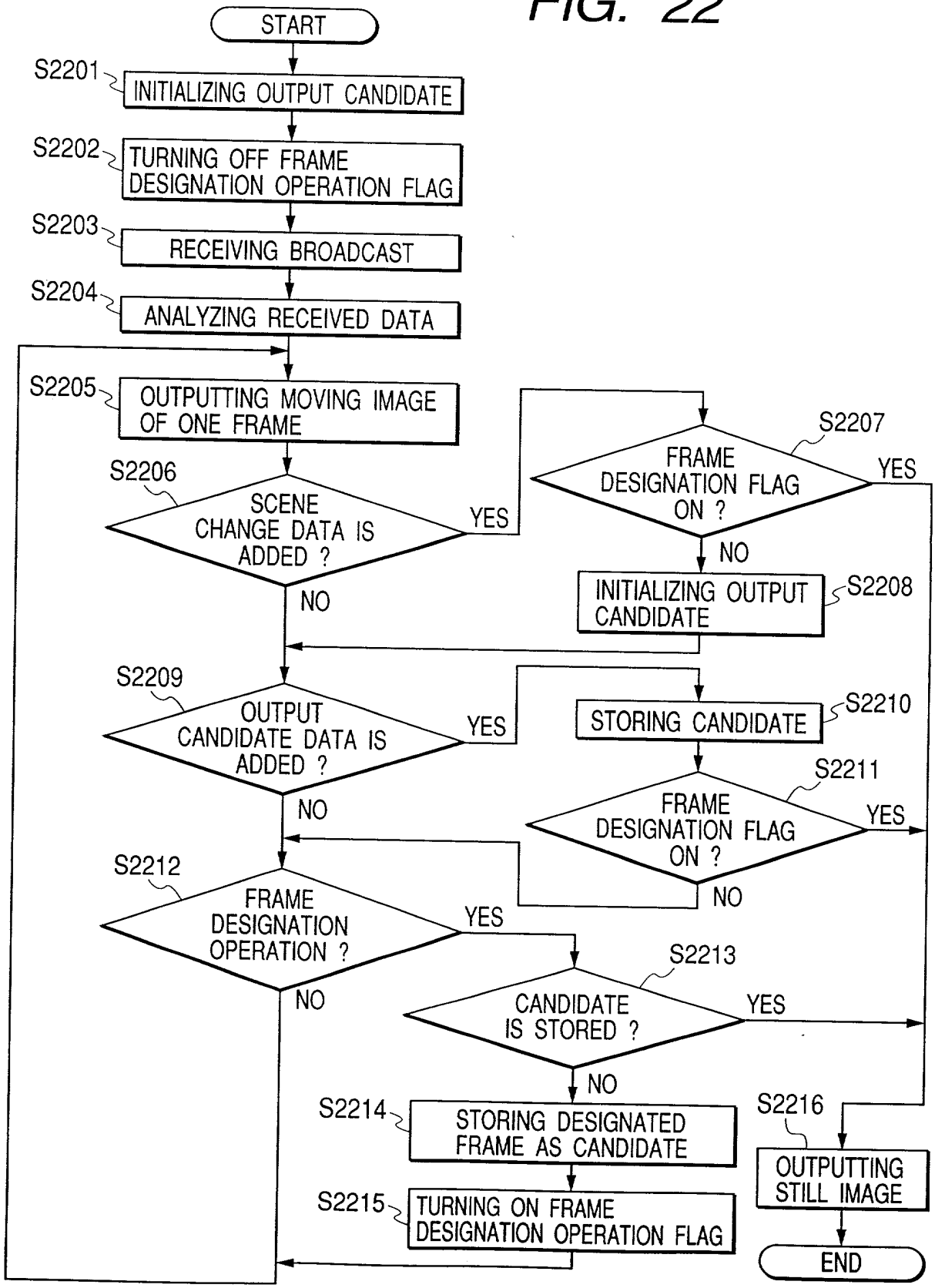

START
S2201
INITIALIZING OUTPUT CANDIDATE
S2202
TURNING OFF FRAME DESIGNATION OPERATION FLAG
S2203
RECEIVING BROADCAST
S2204
ANALYZING RECEIVED DATA
S2205
OUTPUTTING MOVING IMAGE OF ONE FRAME
S2206
SCENE CHANGE DATA IS ADDED ?
YES
NO
S2207
FRAME DESIGNATION FLAG ON ?
YES
NO
INITIALIZING OUTPUT CANDIDATE
S2208
S2209
OUTPUT CANDIDATE DATA IS ADDED ?
YES
NO
STORING CANDIDATE
S2210
S2211
FRAME DESIGNATION FLAG ON ?
YES
NO
S2212
FRAME DESIGNATION OPERATION ?
YES
NO
S2213
CANDIDATE IS STORED ?
YES
NO
S2214
STORING DESIGNATED FRAME AS CANDIDATE
S2215
TURNING ON FRAME DESIGNATION OPERATION FLAG
S2216
OUTPUTTING STILL IMAGE
END

FIG. 23

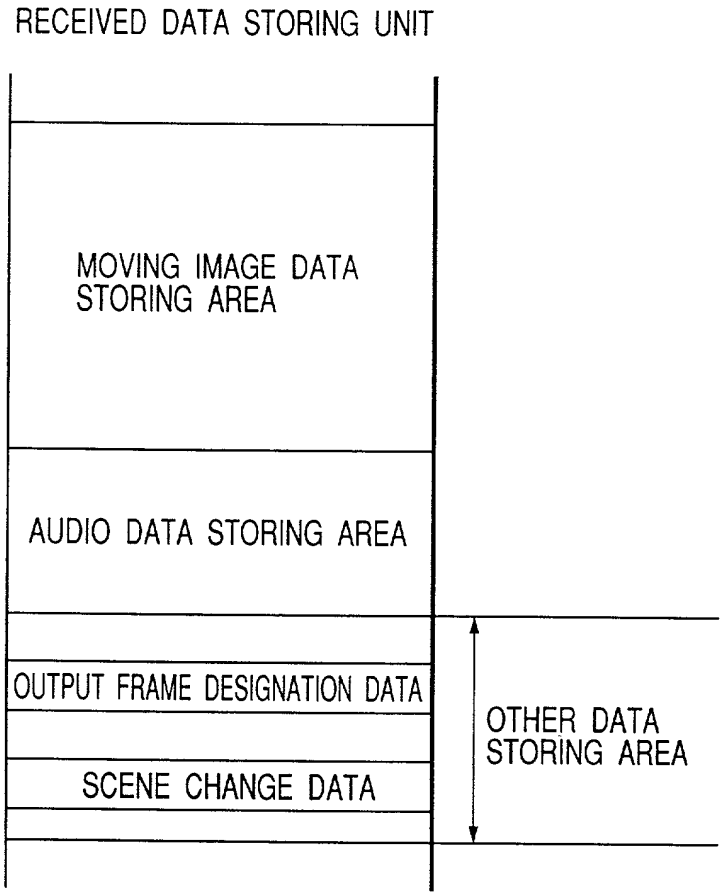

RECEIVED DATA STORING UNIT
MOVING IMAGE DATA STORING AREA
AUDIO DATA STORING AREA
OUTPUT FRAME DESIGNATION DATA
SCENE CHANGE DATA
OTHER DATA STORING AREA

FIG. 24

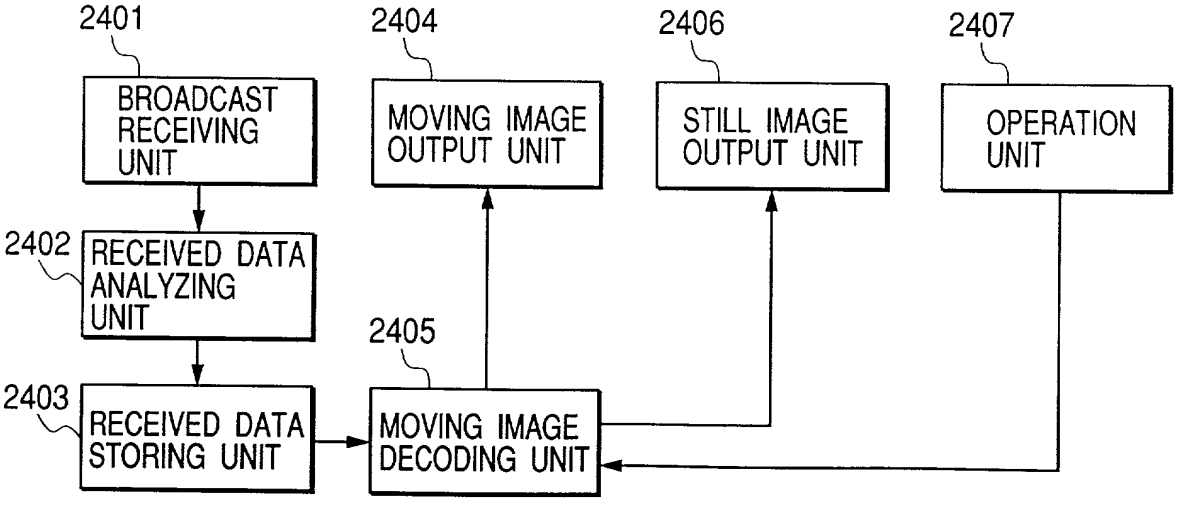
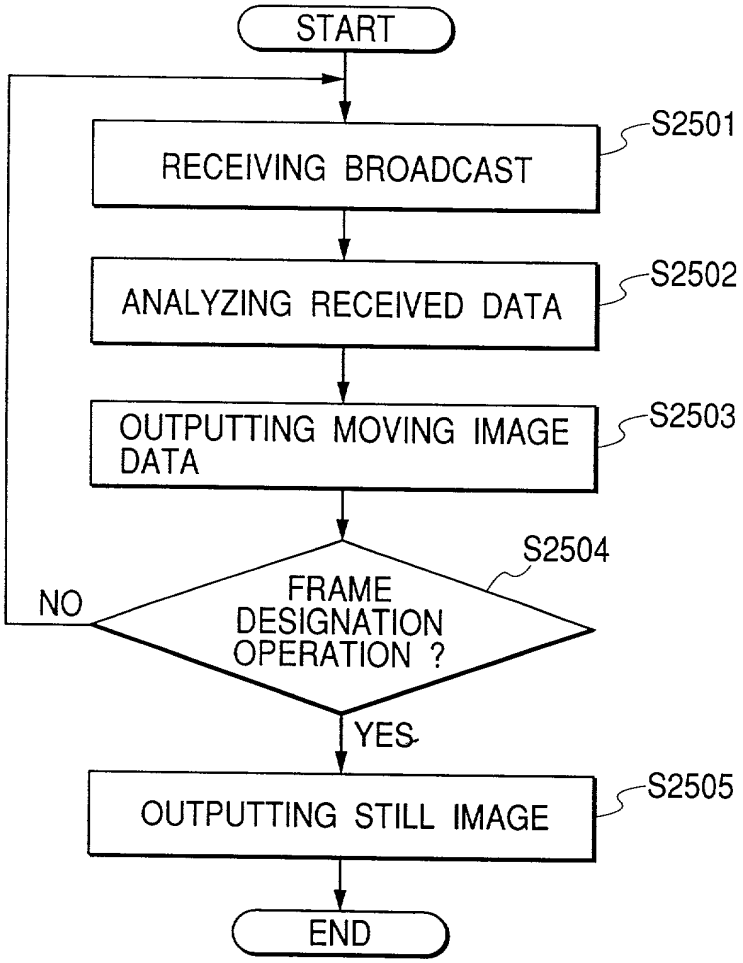

2401
BROADCAST RECEIVING UNIT
2402
RECEIVED DATA ANALYZING UNIT
2403
RECEIVED DATA STORING UNIT
2404
MOVING IMAGE OUTPUT UNIT
2405
MOVING IMAGE DECODING UNIT
2406
STILL IMAGE OUTPUT UNIT
2407
OPERATION UNIT

FIG. 25


START
RECEIVING BROADCAST
S2501
ANALYZING RECEIVED DATA
S2502
OUTPUTTING MOVING IMAGE DATA
S2503
FRAME DESIGNATION OPERATION ?
S2504
NO
YES
OUTPUTTING STILL IMAGE
S2505
END